

REMARKS

Claims 1-2, 8-9, 11-12 and 18-19 are rejected by the Examiner under 35 USC 102(b) as being anticipated by Barrett et al., U.S. Patent 5,301,036. Claims 3-6 and 13-16 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Barrett et al. in view of Yamashita et al., U.S. Patent 5,907,744. Claims 7 and 17 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Barrett et al. in view of Kaneko et al., U.S. Patent 5,517,295. Also, claims 10 and 20 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Barrett et al. in view of Williams et al., U.S. Patent 5,390,029. These rejections are respectfully traversed.

The present invention is directed to a method for automatically deciding on the image orientation of originals and the use of this information in a number of image-consolidating operations, such as simplex->duplex composition, finishing, for example stapling, and image composition or decomposition. The inventive method does not require an operator to enter information on the image orientation of the originals by way of operating keys, but requires him to feed the originals in a prescribed but easy-to-understand way (readable). The machine then does the rest automatically. The Barrett et al. patent is about image rotation in a copying machine for use in simplex/duplex change and image composition (signature printing). In such applications, the

individual images must also be rotated in order to produce useable copies. However, exactly what rotations are to be performed is never immediately evident, and errors may often be made. Therefore, Barrett et al. propose a system in which the operator of a computer device simply has to specify with which images he starts and what he wants to achieve. Then the device itself calculates what rotations are necessary and applies them without bothering the operator.

In particular, the Barrett reference discloses two functions, that is, plex charge and signature composition. In plex charge, the Barrett reference proposes two automatic modes, that is, the Basic mode and Special mode (see, for example, Figs. 8A and 8B and Col. 7, line 63 to Col. 8, line 11). In the Special mode, the operator is required to enter the image orientations of the separate images to be integrated, and therefore this mode is not relevant to the present invention which defines a way to precisely prevent such a requirement. In the Basic mode, the operator only has to enter information on the plex of the original and the copy. No information regarding image orientation is required (see Col. 7, the last sentence of the Barrett et al. patent). According to the reference disclosure, output prints are at the same orientation as input documents. This is the only disclosure relevant to the present invention, since it obviously does not require the operator to

enter orientation information. The disclosure, however, is rather cryptic. The disclosure is clear for simplex→simplex and duplex→duplex copies. In these situations, an orientation can be defined in the same manner for the original and the copy, so it is justified to speak about the "same orientation." Also, it appears that any orientation policy leads to correct copies (i.e., identical to the original). In other words, the machine does not even have to have a notion of the actual orientations of the individual images on the original. However, the disclosure is not clear for the situation of plex change, e.g., simplex→duplex, and does not define what is meant by "the same orientation."

In simplex→duplex, the individual original (simplex) images have a specific orientation, and it is to be expected that this orientation will be the same on the copy (like in simplex→simplex copies). But the way in which the individual images are put together on one sheet of paper is still a matter of choice, i.e., long edge duplex or short edge duplex. This choice is not generally ruled by image orientation, although it is in the present invention.

When a copier does not have a notion of the image orientations, it would be a safe choice to have long edged duplex as default, since this is most common in documents. This happens to be the default in the market. Indeed, the Barrett et

al. patent does not disclose what the actual duplex copy looks like. In fact, it is not clear from the disclosure if the Barrett et al. device has a notion of the image orientations. In this connection, the fact that in all instances other than the Basic copier mode, the operator must specify the image orientations of all images in the documents, would indicate that the machine itself has no notion, in any case, no automatic notion, of these orientations.

In contrast thereto, the copier of the present invention does have an automatic notion of the orientations of the individual images on the original documents. Having such a notion, it automatically controls such functions as simplex→duplex imaging, finishing, and imaging composition and decomposition in correspondence therewith. Thus, in the present invention, the duplex image (binding edge) is consistently chosen to be located at a predetermined edge of the image, that is the left edge. This means that the long edge duplex is chosen for portrait originals and the short edge duplex is chosen for landscape originals. Also, the other functions mentioned base their operation on this automatic orientation notion.

As already described in the present application, an automatic notion of the image orientation is also present in other, known machines, but in these cases, the orientations are

determined by image interpretation techniques such as text recognition. In the present invention, the operator is required to place the documents in a semi-readable position on the platen or document feeder, and the machine bases its orientation information thereon, making these complicated automatic image processing operations superfluous. Thus it would seem that there is no basis to decide that the Barrett apparatus should have an automatically determined notion of the image orientations of the individual images of the original document to be copied. Certainly, since the Barrett et al. patent is not explicit as to what happens, the reference patent cannot be utilized by the Examiner to anticipate claims 1 and 11 of the present application. As to the dependent claims, these claims define a number of applications of the automatically determined image orientation notion, such as for example, (claim 3) finishing, in particular stapling, punching and binding; (claim 7) simplex→duplex; (claims 8 and 10) image composition (2-up, multi-up) and decomposition.

With respect to claims 3 and 13, the Examiner relies upon the Barrett et al. patent in combination with the Yamashita patent. However, the Yamashita patent does not disclose any more than a copier having a stapler device. The choice of the staple position should be made by the Barrett et al. device since the Yamashita patent does not disclose this feature.

However, as discussed hereinabove, it has been shown that it is not evident that the Barrett et al. patent has a notion of the image orientations, and accordingly, would not make the claims of the present application obvious over a combination of Barrett et al. in view of Yamashita et al.

With respect to claims 7 and 17, the Examiner relies upon the Barrett et al. patent in combination with the Kaneko et al. patent. However, the Kaneko et al. patent only discloses a copier having a duplex function. The choice of the duplex edge must be made by the Barrett et al. device since the Kaneko et al. device does not disclose this feature. However, since it is not evident that the Barrett et al. patent has a notion of image orientations, and since the Kaneko et al. patent does not fill this deficiency, it is believed that the combination of the Barrett et al. patent with the Kaneko et al. patent does not render obvious claims 7 and 17 of the present application.

With respect to claims 8 and 18, the Examiner finds all details of image composition in the Barrett et al. patent, in particular, the way of composing the sub-images on the basis of the perceived image orientations. However, the Barrett et al. patent derives its notion of image orientations from the explicit input thereof by the operator (see Fig. 10 and Col. 9, lines 53-55).

With respect to claims 10 and 20, the Examiner relies on Barrett in combination with Williams et al. The Williams et al. patent does not disclose more than an image processing device for extracting sub-images from a scanned image. The extraction should be controlled by the Barrett et al. apparatus, since Williams et al. does not disclose such a feature. However, it has been shown hereinabove that since the Barrett et al. patent does not have a notion of image orientations, the further combination of the Williams et al. patent with the Barrett et al. patent cannot possibly suggest the present invention.

Accordingly, in view of the above remarks, reconsideration of the rejections and allowance of the claims of the present application are respectfully requested.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joseph A. Kolasch (Reg. No. 22,463) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a one-month extension of time for filing a reply in connection with the present application, and the required fee of \$110 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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